answer to the question,—"What is the good of Archæology?" wherein he compared it to the telescope as the medium through which far distant things are revealed to our knowledge.

"It is the observation of Madame de Stael, that 'the erudition derived from archæology is far more animated than that we acquire from books: we seem to revive what we unveil, and the past appears to rise from the dust which concealed it. This passion for antiquity is no idle prejudice. We live in an age when self-interest seems the ruling principle of all men. What sympathy—what enthusiasm can ever be its results.' Madame de Stael, in the same work, also truly says, 'Antiquity inspires insatiable curiosity. To penetrate the past, interrogate the human heart through many ages, to seize on a fact, on a word, and on the manners or customs of a nation; in fact, to re-enter the most distant time in order to conceive how the earth looked in its youth, and in what way men supported the life which civilization has since rendered so complicated—this were a continual effort of imagination, whose guesses discover secrets that study and reflection cannot reveal.' Thus does Madame de Stael popularly show how archæology affects history. Without its aid history is but fable, or what is worse than fable, theory, as regards the past. Archæology establishes or contradicts the existence of nations, and whether they flourished or fell. History may record their rise and progress, but archæology must be the evidence whether history be true or false. Archæology cannot take its proper position as a science until its value is acknowledged, its treasures arranged, and its principles understood. In the process of procuring the most precious ore, much worthless matter has often to be carefully sifted and cast away before its sterling worth can be ascertained; so must the rubbish which encumbers the golden treasures of archæology be gradually cleared away by scientific labourers. In this process, however, the great difficulty is to say what is, or what is not, deserving the name of rubbish. A single character or mark upon the merest fragment of a stone, or piece of clay, may be of infinite importance in forming a link wanting decidedly to connect a chain of convincing argument—that link will be supplied by the study of archæology."

Mr. J. R. Planché read a paper that must have cost him much labour and research, on the "Seals of the Earls of Chester," which afford some curious illustrations of the practice of bearing arms. "No tale," said Mr. Planché truly, "has been too idle, no fable too preposterous, for the majority of the writers on this important, but mis-used subject. Had half the ingenuity and industry been exerted to discover the real origin of armorial insignia which has been wasted upon inventing stories to account for them, what service might have been rendered to history—what light thrown upon genealogy and biography! How many a document has now disappeared or utterly perished, which was accessible to Upton, Legh, Morgan, Fern, Randal Holmes, and others, who have used them but to mystify and perplex their readers! Is it too late to unravel the skein they have so wantonly tangled, to extract the valuable grains which it is but justice to admit they have preserved to us from the bushel of chaff in which they are so provokingly smothered?"

Mr. W. Beamont, in the course of an account of the remains at Edisbury, a place only seven miles from Chester, yet little known, inquired how it happens that within the precincts of Edisbury we seek in vain for any remains of the castle of the Saxon foundress, Elfleda, or for any decisive traces of the contemporaneous existence of buildings?

"Walls and structures raised by the Romans in Britain, said he, many centuries before the birth of Edisbury, still remain to attest the grandeur of the builders. The Norman fortress of Halton, and the still greater remains of Beeston, arrest the eye of the traveller at a distance, and astonish him by their grandeur on a near approach. How is it then that within this royal city, raised by the illustrious daughter of our greatest monarch, not one stone remains upon another to show what a Saxon palace might be? Is it that here the hand of the spoiler has been more unrelenting in his devastation, or that the successive waves of ruin have wrecked the last vestiges of Saxon architecture within it? The demolition of Edisbury cannot, I think, be ascribed to any such causes. It is more probably owing to the habits of our Saxon ancestors, and the general character of their architecture, that we are without any remains of buildings either ecclesiastical or civil within the enclosure of Edisbury. The Saxons were mean builders; neither the structure nor the materials of a Saxon house were calculated for long duration, else would our Saxon ancestors, during their long sway in England, have left us more numerous as well as more perfect remains of the buildings they erected for civil or religious purposes. The ecclesiastical structures of undoubted Saxon origin are but few, and a writer in the *Encyclopædia Metropolitana* informs us there were but few castles in England at the time of the Norman conquest, and that a part of the conqueror's success is to be attributed to that circumstance. Mr. Fishbrooke has given a description and a plate of an ancient Saxon house, and of its prototype, a house of their predecessors the Britons, neither of which structures, either by their form or their materials, gave promise of a long life. It appears, says Mr. Henry, from many incidental hints in our ancient historians, that stone buildings were still very rare in the 8th and 9th centuries, and that when such buildings were erected they were objects of much admiration. Some of the buildings of Alfred were magnificent for that age, and of a new and singular construction; but they were generally more remarkable for their number and utility than their grandeur; for there is sufficient evidence that long after his time almost all the houses in England, and by far the greatest part of the monasteries and churches, were very mean buildings, constructed of wood and covered with thatch."

Of Mr. Halliwell's paper on the "Cottage Literature of the Palatine Counties," read by Mr. Pettigrew, we can only give two jokes from the curious tract of "Tom of Chester," supposed to have been printed in the latter part of the 17th century.

Thus,—an old painter, at the repairing of a church in Chester, was writing sentences of Scripture upon the walls. By chance Tom came into the church, and reading them, perceived much of false English. "Old man," said Tom, "why don't you write true English?" "Alas! Sir," quoth he, "they are poore simple people in this parish, and they will not goe to the cost of it." And again,—"A gentleman in Chester had a goodly fair house, new built, but the broken bricks, tiles, sand, limestones, and such rubbish as is commonly the remains of such buildings, lay confusedly in heaps, and scattered here and there. The gentleman demanded of his surveyor wherefore the rubbish was not carried away. The surveyor said that he purposed to hire a hundred carts for the purpose. The gentleman replied that the charge of carts might be saved, for 'a pit might be digged in the ground and bury it.' 'Sir,' said the surveyor, 'I pray you, what shall we do with the earth which we dig out of the said pit?' 'Why, you silly fellow,' said the gentleman, 'canst thou not dig the pit deep enough, and bury altogether?'"

On the second day, Mr. W. H. Black, of the Record Office, gave a very elaborate review of the public records, which lasted two hours and a-half, and yet fatigued none.

On Wednesday the association, after an examination of the cathedral, went to Conway Castle, to hear a paper on it by Mr. Hicklin, and on Thursday they were to visit Liverpool, to examine some buildings in the neighbourhood and read papers.

A very interesting temporary museum has been formed, in what was formerly the refectory adjoining Chester Cathedral, and is now known as the "King's School." There is a well-known Early English pulpit here, of which we shall give a view.

THE PERSONAL QUESTION AS TO THE TUBULAR BRIDGES.*

The tubular bridges constitute an idea now not only realised on British ground, but described and accounted for in the folios of a goodly volume, of great interest and importance. To Mr. Fairbairn the engineering and architectural profession are as certainly indebted for the latter benefit, as he conceives they are for the former, all due justice to the originater of the idea notwithstanding.

In the outset of this elaborate volume, which, besides a large mass of correspondence, and a minute detail of numerous experiments, contains upwards of twenty large plates and a multitude of minor woodcuts, the author, after alluding to the peculiar difficulties to be overcome at Conway and Menai, and the necessity for some *new* expedient in engineering, says—

"It was under these circumstances—having to encounter extraordinary difficulties of execution, and being compelled, by the opposition of so powerful a branch of the Government as the Admiralty Board, to abandon the ordinary resources of the engineer—that Mr. Stephenson conceived the original idea of a huge tubular bridge, to be constructed of riveted plates and supported by chains, and of such dimensions as to allow of the passage of locomotive engines and railway trains through the interior of it.

It was with reference to this expedient, after all others had been found inapplicable, that I was consulted by him, and that my opinion was requested, first as to the practicability of the scheme, and secondly as to the means necessary for carrying it out. This consultation took place early in April, 1845, and as far as could be gathered from Mr. Stephenson at the time, his idea then was, that the tube should be either of a circular or an egg-shaped sectional form. He was strongly impressed with the primary importance of the use of chains, placing his reliance in them as the principal support of the bridge; and he never for a moment entertained the idea of making the tube self-supporting. The wrought-iron tube, according to his idea, indeed, was entirely subservient to the chains, and intended to operate from its rigidity and weight as a stiffener, and to prevent, or at least to some extent counteract, the undulations due to the catenary principle of construction. In fact, for many months afterwards, and even up to the time of the experiments on the model tube in December, 1846, he insisted, as will be seen from the annexed correspondence, on the application of such chains. A perusal of this correspondence will, moreover, show that I was throughout strongly opposed to their application, even as an auxiliary. I always felt that in a combination of two bodies, the one of a perfectly rigid, and the other of a flexible nature, there was a principle of weakness; for the vibrations to which the one would be subjected, would call into operation forces whose constant action upon the rivets and fastenings of the other could not but tend to loosen them, and thus, by a slow but sure agency, to break up the bridge.

At the period of the consultation in April, 1845, there were no drawings illustrative of the original idea of the bridge, nor had any calculations been made as to the strength, form, or proportions of the tube. I was asked whether such a design was practicable, and whether I could accomplish it; and it was ultimately arranged that the subject should be investigated experimentally, to determine, not only the value of Mr. Stephenson's original conception, but that of any other tubular form of bridge which might present itself in the prosecution of my researches. The matter was placed unreservedly in my hands; the entire conduct of the investigation was entrusted to me; and, as an experimenter, I was to be left free to exercise my own discretion, in the investigation of whatever forms or conditions of the structure might appear to me best calculated to secure a safe passage across the Straits. This freedom of action was obviously necessary to the success of my experiments."

* An Account of the Construction of the Britannia and Conway Tubular Bridges: with a complete history of their progress, from the conception of the original idea to the conclusion of the elaborate experiments which determined the exact form and mode of construction ultimately adopted. By William Fairbairn, C.E. London: Weale; and Longman and Co. 1849.